

ABSTRACT

The present invention concerns a method for fabricating a nanowire thermoelectric device comprising the step of forming a first electrode pattern on a substrate, wherein the first electrode pattern comprises bottom electrodes and a first set of connections, which connects the bottom electrodes to form first and second groups of electrically connected bottom electrodes. P-type nanowires and n-type nanowires are selectively formed on the substrate by selectively activating either the first group of electrically connected bottom electrodes and the second group. The p-type and n-type nanowires are then connected by top electrodes. A first set of holes in the substrate is formed to remove the first set of connections. A second set of holes to allow for electrical access to the bottom electrodes, and a second set of connections are formed, so as to result in an array of thermocouples connected to each other in parallel banks of series-connected thermocouples.